# APPENDIX F

## Appendix to the Installation Master Plan

## Land Use Controls at DDJC-Tracy
## (Appendix to the Installation Master Plan)

This appendix describes the land use controls that have been implemented at several locations at DDJC-Tracy to protect human health and the environment. Land use controls are part of the selected remedy at several sites with soil contamination. These protective controls are required at these sites because residual soil contamination has been left in place that may pose a threat to human health or the environment. Three issues that jeopardize human health or the environment are as follows:

- Contaminants are present at concentrations that permit existing industrial land uses, but that exceed the concentrations that would allow for unrestricted reuse (including residential development).
- Residual contamination at selected sites potentially threatens the quality of the underlying groundwater. Land use controls for these sites are required to maintain the existing ground cover to minimize water infiltration.
- Land use controls are required for contaminated soil left in place at SWMU 2/3, SWMU 6, and DSERTS 67 where contaminant concentrations in subsurface soil could impact construction workers.

The DDJC-Tracy soil sites requiring land use controls are identified on Figure 1. Groundwater use controls are identified in the fact sheet for OU 1 Groundwater (on-Depot portion of plumes).

Land use controls are administrative measures selected by the Defense Logistics Agency (DLA) to limit exposure to residual hazardous substances. These measures restrict future land use and ensure the effectiveness of the remedy at all sites. The DLA is responsible for implementing, monitoring, maintaining, and enforcing the identified controls. If the DLA determines that it cannot meet specific land use control requirements, it is understood that the remedy may be reconsidered and that additional measures may be required to ensure the protection of human health and the environment.

### Purpose of this Appendix

This appendix to the Installation Master Plan (IMP) describes:

- Specific controls required at each site and explains that controls are required because of the presence of pollutants or contaminants;
- The current land users and uses of the site; and
- The geographic control boundaries and the objectives of the controls.

All sites with land use controls are restricted from use for residential development, play areas, or day care facilities. Please contact the DDJC-Tracy Environmental Project Manager if more information is needed.

### Agency Notification Requirements

DDJC-Tracy is required to notify the regulatory agencies (U.S. EPA, DTSC, and the RWQCB-Central Valley Region) regarding any proposals for a land use change that is inconsistent with the use controls and assumptions; any anticipated action that may disrupt the effectiveness of the land use controls; any action that might alter or negate the need for the land use controls; and any anticipated transfer of the property subject to the land use controls. Notification requirements include:

- Notify the regulatory agencies 45 days in advance of any land use change.
- The DLA will notify U.S. EPA and California as soon as practicable, but no later than 15 days after discovery of any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls. The DLA will notify U.S. EPA and California regarding how the DLA has addressed or will address the breach within 15 days of sending U.S. EPA and California notification of the breach.

Agency notifications must include an IMP Project Approval Form (Attachment 1). Completion of this form is required before the start of any building project or demolition work at DDJC-Tracy. The approval of the IMP Project Approval Form requires a comparison of the building site with the constraints outlined in this appendix. Any components of the proposed project that are inconsistent with the constraints at the site will result in the disapproval of the project approval form unless the requester makes appropriate modifications to the building plans. The DDJC-Tracy Facility Engineer is responsible for the final approval of building projects through this review process.

The DDJC-FA Environmental Project Manager shall notify the signatory parties to the record of decision (ROD) at least 90 days before the commencement of any demolition or construction activities that could expose contaminated soil. The notification shall include:

- A description of the proposed work with a figure identifying the affected area;
- An evaluation of potential impacts to the environment;
- An assessment of whether the proposed activity changes the appropriateness of the ROD remedy; and
- A discussion of the engineering controls that will be used to prevent impacts.

After completion of any demolition or construction activities but before the demobilization of the construction contactor, the agencies will be notified by the DDJC-FA Environmental Project Manager and given an opportunity to inspect the completed site work.

The DDJC-FA Environmental Project Manager will be responsible for coordinating with the Supervisor of Facilities to ensure that emergency response personnel are aware of the environmental issues at institutional control sites and are trained accordingly before they may be required to respond to emergencies (e.g., a water main break).

In emergency situations, advanced notification of repairs to the signatory parties to the ROD is not required. After completion of emergency repairs, the DDJC-FA Environmental Project Manager will notify the agencies of the emergency repairs, describe the response actions taken, and provide the agencies with an opportunity to inspect the site.

**Land Use Control Maintenance Requirements**

DDJC-Tracy is required to maintain existing administrative controls while land use controls are in place. Annual monitoring of sites with land use controls will be performed, and DDJC will take prompt action to restore, repair, or correct any deficiencies or failures identified with the land use controls. A different monitoring schedule may be agreed upon according to the schedule provisions of the Federal Facilities Agreement (FFA) if all parties agree and if the change reasonably reflects the risk presented by the site.

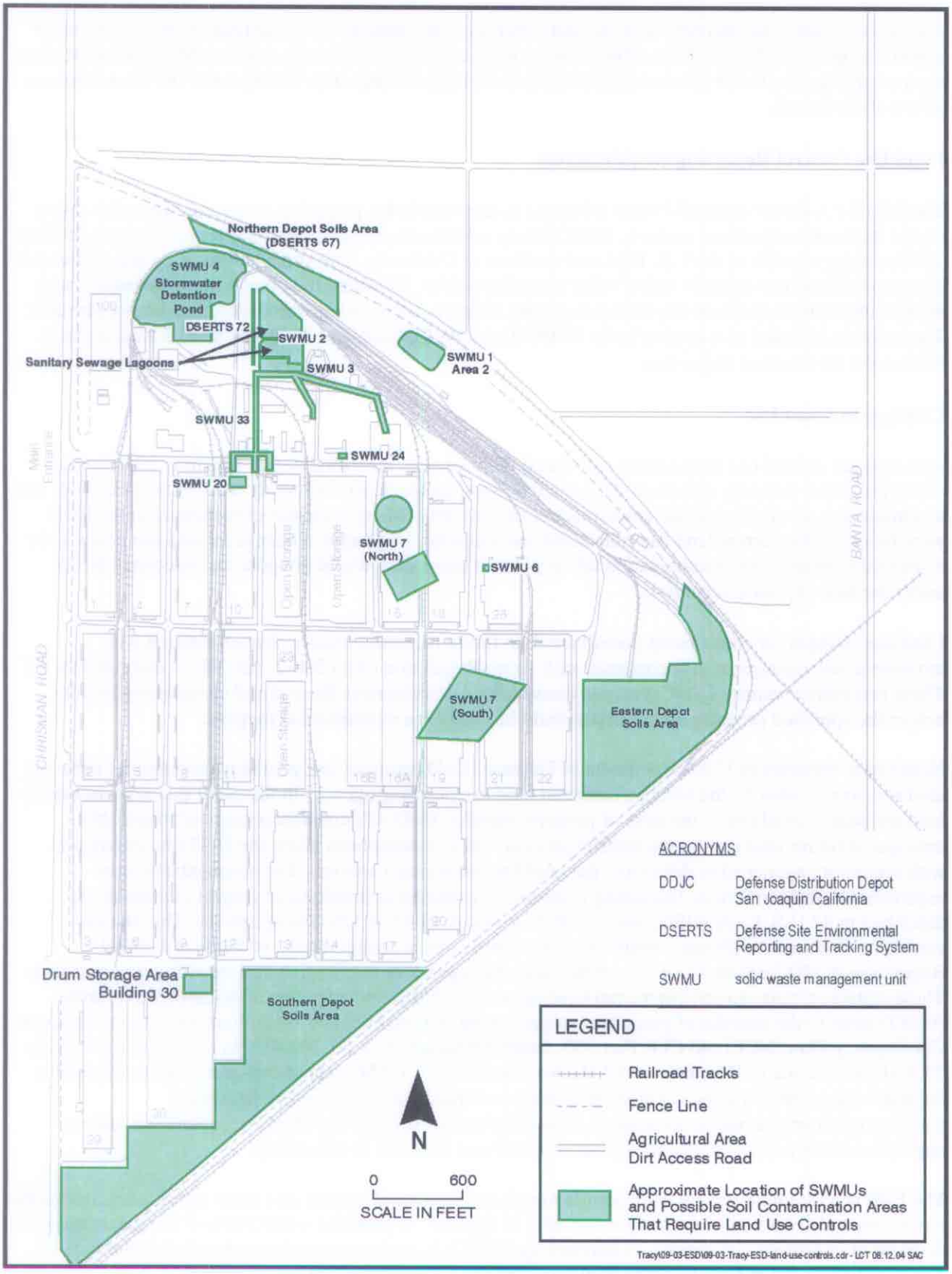


**Figure 1. Soil Sites Requiring Land Use Controls, DDJC-Tracy**

Any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls, will be addressed by DLA as soon as practicable, but in no case will the process be initiated later than 15 days after the DLA becomes aware of the breach.

**Land Use Control Reporting Requirements**

The DDJC-FA Environmental Project Manager is responsible for preparing an annual inspection report on the status of institutional controls. DDJC-Tracy submits an annual monitoring report covering all sites with land use controls to the U.S. EPA and the State of California. The annual monitoring report reviews the status of land use controls and/or other remedial actions, including the operation, maintenance, and monitoring thereof, and how any land use control deficiencies or inconsistent uses have been addressed. The report is included as a section in the DDJC-Tracy Well Monitoring Program Annual Report and is filed in the Information Repository.

**Changes in Land Use**

Any changes in land use for property associated with the sites identified in this appendix requires site characterization (existing data from the remedial investigation/feasibility study [RI/FS] may be used) and, at a minimum, an environmental assessment of the property. Many decisions documented in the ROD were based on the current land use (industrial use scenario). In general, a change in land use needs to be evaluated to ensure that contamination left in place at these sites would not pose an unacceptable risk under the new exposure scenarios.

Land use changes for sites posing potential risk to future receptors require characterization and environmental assessment in accordance with Army Regulation (AR) 200-2, AR 200-1, and AR 415-15. These procedures require DDJC-Tracy to consult the Administrative Record and characterize the site before the specified property on the depot could be used for a nonindustrial purpose.

Nonclosure transfers of U.S. Department of Defense (DoD) property are guided by community input on land use, as provided by the local government land use planning agency. In the event that no community land use plan is available at the time of property transfer, DoD will consider a range of reasonably anticipated future land uses in the transfer process. These assumptions allow the DoD (in conjunction with regulatory agencies) to determine the need for institutional controls. Environmental process requirements and restrictions (including institutional controls) at installations subject to transfer are described in 42 U.S. Code (USC) Section 9620 *et seq.* (CERCLA 120) Paragraph (h). This statute establishes hazardous substance notification and deed content requirements. 40 Code of Federal Regulation (CFR) Section 373 *et seq.* establishes the regulatory notification and reporting requirements. These statutes require an environmental baseline survey (EBS) and a finding of suitability to transfer (FOST) prior to the transfer of properties subject to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300, Federal Register, Vol. 55, No. 46). In accordance with Title 22, California Code of Regulations (CCR), Section 67391.1, DTSC cannot consider property owned by the federal government to be suitable for transfer to nonfederal entities where hazardous wastes/constituents/substances remain at levels that are not suitable for unrestricted land use, unless appropriate land use covenants have been executed and recorded in the county.

The EBS is a thorough review and compilation of environmental records and other activities related to the environmental condition of property at the time of the EBS. It provides notification of storage, release, or disposal of hazardous substances, as required by CERCLA, and supports the preparation of the FOST. The preparation of the EBS includes regulatory review and coordination.

The DoD Component Disposal Agent will ensure that the FOST and other transfer documents, along with the specific land use control strategy or plan for the subject real property, reflect the use restrictions and enforcement mechanisms specified in the remedial decision document. The transfer document will also include a description of the assumed industrial use that was used to develop the remedy and to make the remedial decision in the ROD. The DoD Component Disposal Agent will also ensure that institutional controls and other layered implementation and enforcement mechanisms, appropriate to the jurisdiction where the property is located, are either in place prior to the transfer or will be put in place by the transferee as a condition of the transfer. Examples of layered implementation and enforcement mechanisms include real estate mechanisms, deed restrictions, easements, inspections or monitoring, zoning, and state land use control registry.

Prior to the preparation of a FOST, the regulatory agencies will be notified of the intent to initiate the FOST process. The preparation of the FOST will also include regulatory review and coordination along with public review and notification.

The DoD expects the transferee and subsequent owners to abide by the restrictions stated in the transfer documents, and will work with all appropriate federal, state, and local agencies and prospective property owners to ensure the ongoing effectiveness of institutional controls. If DoD becomes aware of action or inaction by any future owner that causes or threatens a release or results in the ineffective performance of the remedy, DoD reserves the right to perform any additional cleanup necessary to protect human health and the environment and to recover the costs of such cleanup from that owner under the terms of the transfer document or other authority.

**Land Use Control Sites**

The specific sites requiring land use controls are identified in the following 14 fact sheets. Each fact sheet includes a figure depicting the site, provides the purpose of the land use controls, describes the land use control requirements, summarizes actions taken to date, and lists the contaminants of concern that remain at the site.

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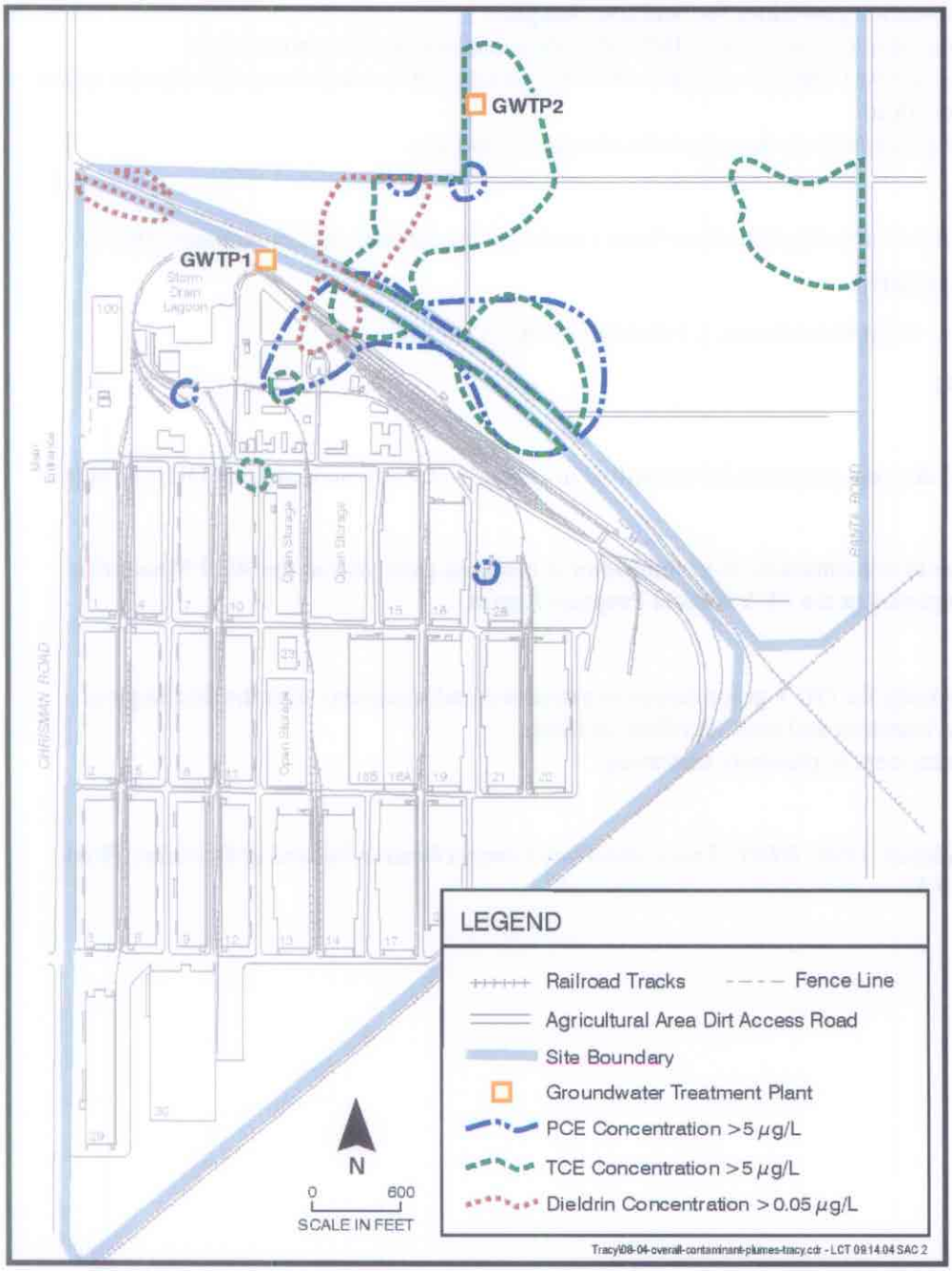
## SITE: OU 1 Groundwater (On-Depot Portion of Plumes)




### Purpose of Controls:

- Prevent exposure to contaminated groundwater.

### Land Use Control Requirements:

- Prevent domestic use of contaminated groundwater (untreated) within the contaminant plumes. (Contact DDJC-Tracy Environmental Project Manager for most recent map of plume extent.)

- Protect infrastructure associated with OU 1 groundwater monitoring, extraction, treatment, and disposal (any damage to infrastructure must be promptly repaired).
- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.

### Actions to Date:

- Two groundwater treatment plants have been constructed to address the contaminant plume.

### Contaminants of Concern:

- Trichloroethene, tetrachloroethene, 1,1-dichloroethene, Dieldrin.

### Site Characteristics:

### Past Site Activities

- Previous waste disposal practices have resulted in groundwater contamination at DDJC-Tracy.

### RI/FS Activities

- The distribution of contaminants in groundwater is assessed each year in the Well Monitoring Program and reported in the FFA Annual Progress Report.

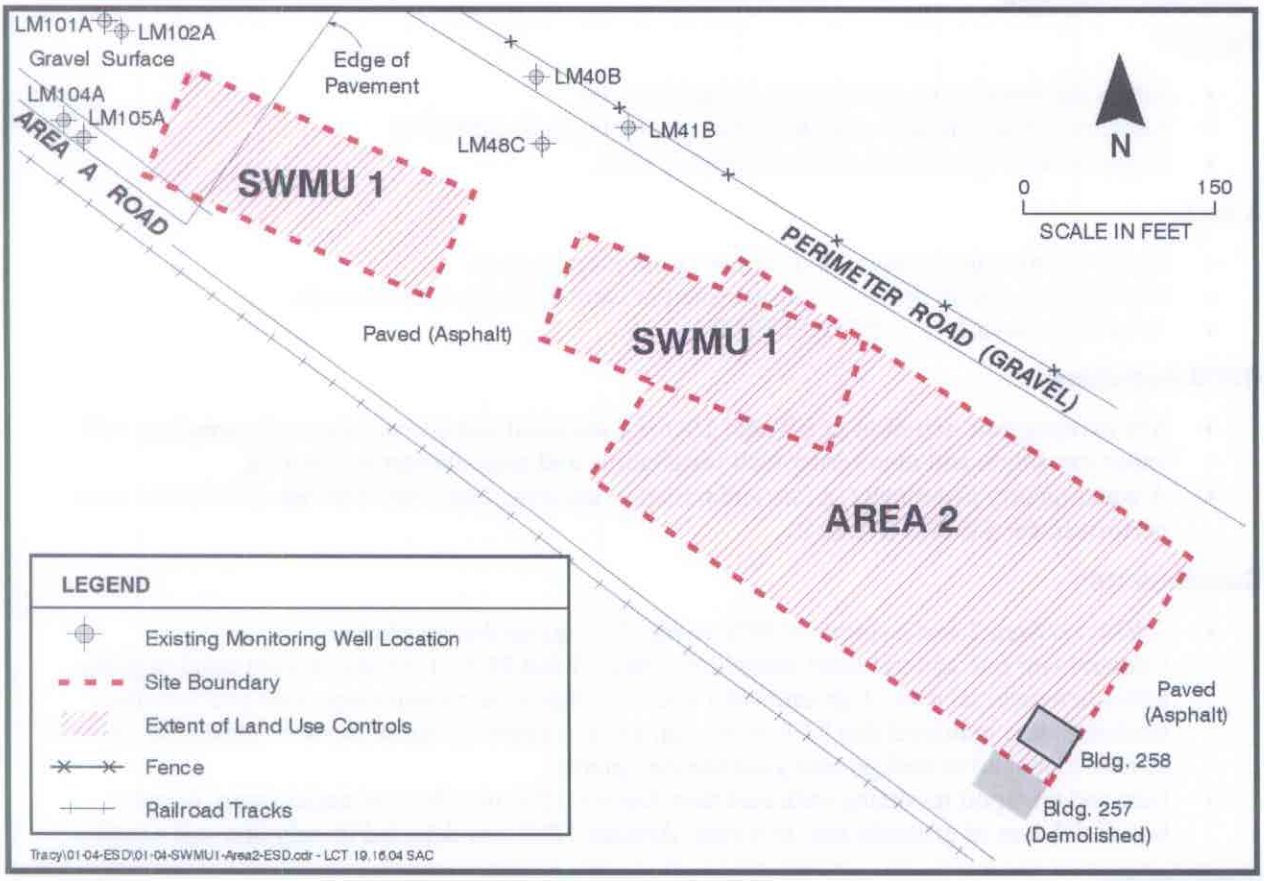
### Conclusions:

- The selected remedy for OU 1 groundwater is extraction and treatment with the discharge of treated water to injection and overland flow facilities.
- Groundwater treatment is presently underway.

### References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision*. Final. April. Section 9.5.

## SITE: SWMU 1/Area 2




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

### Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Performed soil vapor extraction to address volatile organic compounds. Other contaminants left in place pose a health risk under the residential scenario according to the baseline risk assessment.

### Contaminants of Concern:

- Beryllium and Polycyclic Aromatic Hydrocarbons.

## Site Characteristics:

### Past Site Activities

SWMU 1

- Site is the reported location of old sewage lagoons.
- Sanitary sewage effluent was discharged to the lagoons until 1942.
- Lagoons were abandoned and backfilled in 1944.

Area 2

- Site is the reported location of a former Drum Storage Area.
- Chemicals stored in drums possibly leaked or were discharged accidentally.
- Area 2 was used from 1957 until 1984.

### RI/FS Activities

- Site investigation activities at SWMU 1/Area 2 included soil gas surveys, soil sampling, soil vapor extraction and monitoring well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 1/Area 2.

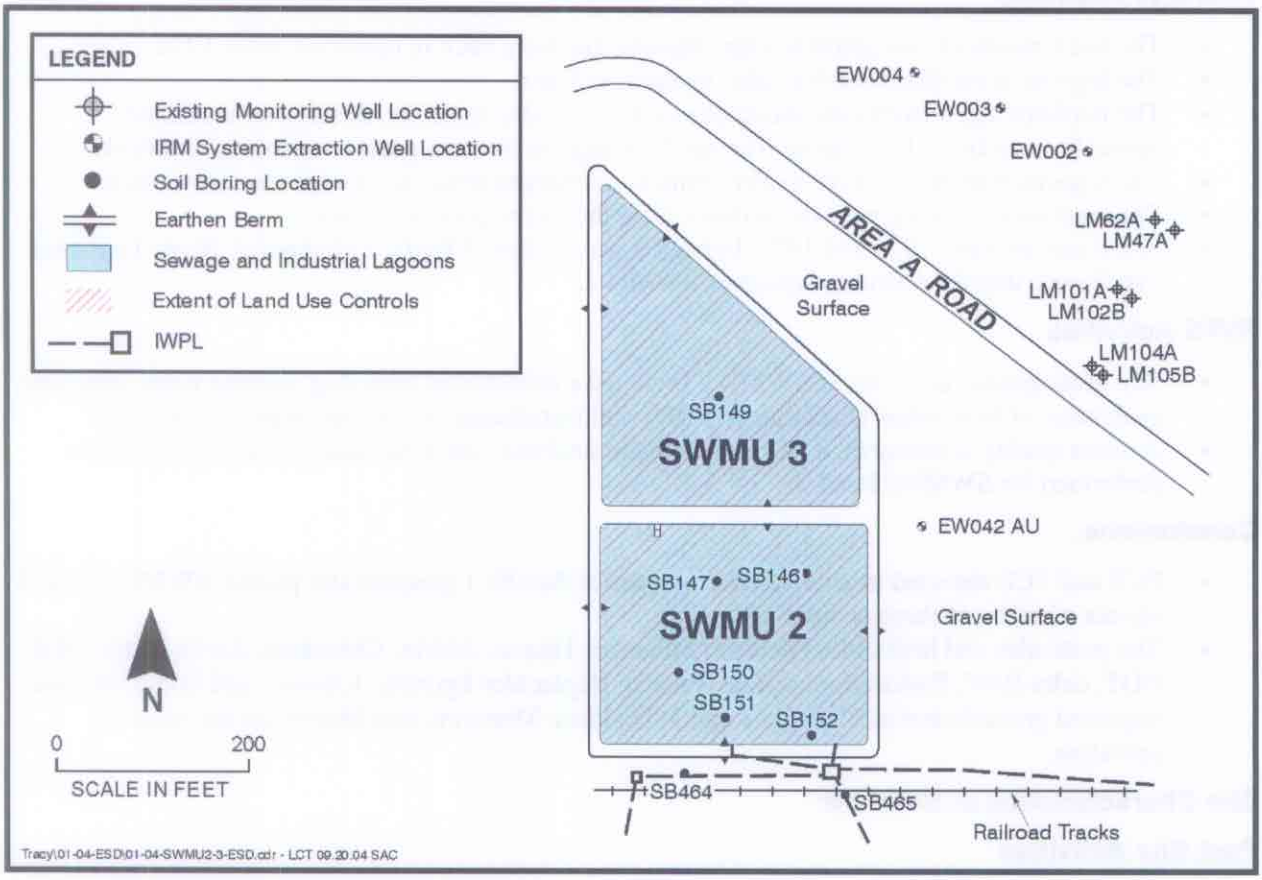
## Conclusions:

- SWMU 1/Area 2 was a source of PCE to the OU 1 groundwater plume.
- Contaminant fate and transport modeling indicated that PCE in the soil is a potential ongoing threat to beneficial uses of groundwater and to background groundwater. Fate and transport modeling also indicated that TCE in the soil gas is a potential future threat to beneficial uses of groundwater and to background groundwater quality.
- Fate and transport modeling indicated that Aroclor 1260 may be a potential future threat to beneficial uses of groundwater; however, Aroclor 1260 was detected in only one soil sample.

## References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4: paragraph 4.4.2.

## SITE: SWMUs 2 and 3




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Excavation addressed threat to groundwater and threat to ecological receptors. Residual soil contamination includes scattered areas with dieldrin concentrations above industrial preliminary remediation goals.

### Contaminants of Concern:

- Aluminum, Beryllium, and Dieldrin.

### Site Characteristics of SWMU 2:

#### Past Site Activities

- The site consists of two active sewage lagoons that have been in operation since 1942.
- The lagoons are unlined and bounded by earthen dams.
- The northern lagoon supports abundant vegetation and animal life; this lagoon is cleared annually, sometimes by burning. The southern lagoon contains grassy vegetation and reeds.
- The lagoons currently receive treated effluent discharged from the sewage treatment plant.
- The lagoons previously received effluent from the motor pool wash rack.
- Sometime between 1971 and 1979, industrial wastes from SWMU 3 (Industrial Waste Lagoons) overflowed into the southern lagoon of SWMU 2.

#### RI/FS Activities

- Site investigation activities at SWMU 2 included soil/sediment sampling, surface water sampling, evaluation of hexavalent chromium in soils, well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMUs 2 and 3.

#### Conclusions:

- PCE and TCE detected in groundwater are part of the OU 1 groundwater plume; SWMUs 2 and 3 are not a source of these compounds.
- The pesticides and herbicides Dieldrin, Monuron, Diuron, Aldrin, Chlordane, 2,4-D, DDD, DDE, DDT, delta-BHC, Endosulfan, sulfate, Endrin, Heptachlor Epoxide, Linuron, and Simazine have impacted groundwater at SWMUs 2 and 3; Dieldrin, Monuron, and Diuron are the most prevalent.

### Site Characteristics of SWMU 3:

#### Past Site Activities

- The site consists of two lined industrial waste lagoons that are situated within a larger sanitary sewage lagoon (SWMU 2).
- The smaller lagoon was installed in 1972 and was unlined during the first year of use.
- The larger lagoon was installed between 1975 and 1979 and was lined at time of construction.
- Historically, the lagoons received wastewater from the Industrial Wastewater Pipeline that included effluent from the recoup operations from Building 26 (wastewater from repackaging of petroleum products) and effluent from Building 10 (wastewater from paint stripping, degreasing, and steam-cleaning operations).
- Phostoxin (an insecticide and rodenticide) was released into the lagoon several times between 1975 and 1979.
- Currently, no effluent is entering the lagoons.

#### Conclusions:

- Contaminant fate and transport modeling indicated that the pesticides and herbicides Aldrin, Chlordane, DDD, DDE, DDT, Dieldrin, Diuron, Endrin, Lindane, Monuron, 2,4-D, and Heptachlor Epoxide in the soil, sediment, and surface water pose a potential future risk to groundwater.
- The pesticides and herbicides listed in the previous bullet also pose a potential risk to ecological receptors in the surface water and soil. In addition, the estimated risk for selenium in soil, sediment, or surface water is above the benchmark level for ecological receptors; however, this risk is considered conservative because of the biases in the analytical data.

- Compounds besides those listed above were detected in soil, sediment, and groundwater; however, none exceeded the risk criteria or represented a potential or actual threat to beneficial uses of groundwater or background groundwater quality. Thus, these compounds are not considered contaminants of concern.
- Contaminant fate and transport modeling indicated that the SVOCs bis(2-ethylhexyl)phthalate, 2,4-dimethylphenol, di-n-butylphthalate, and 4-methylphenol in the soil or sediment pose a potential future risk to groundwater.

**References:**

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4: paragraph 4.4.2.

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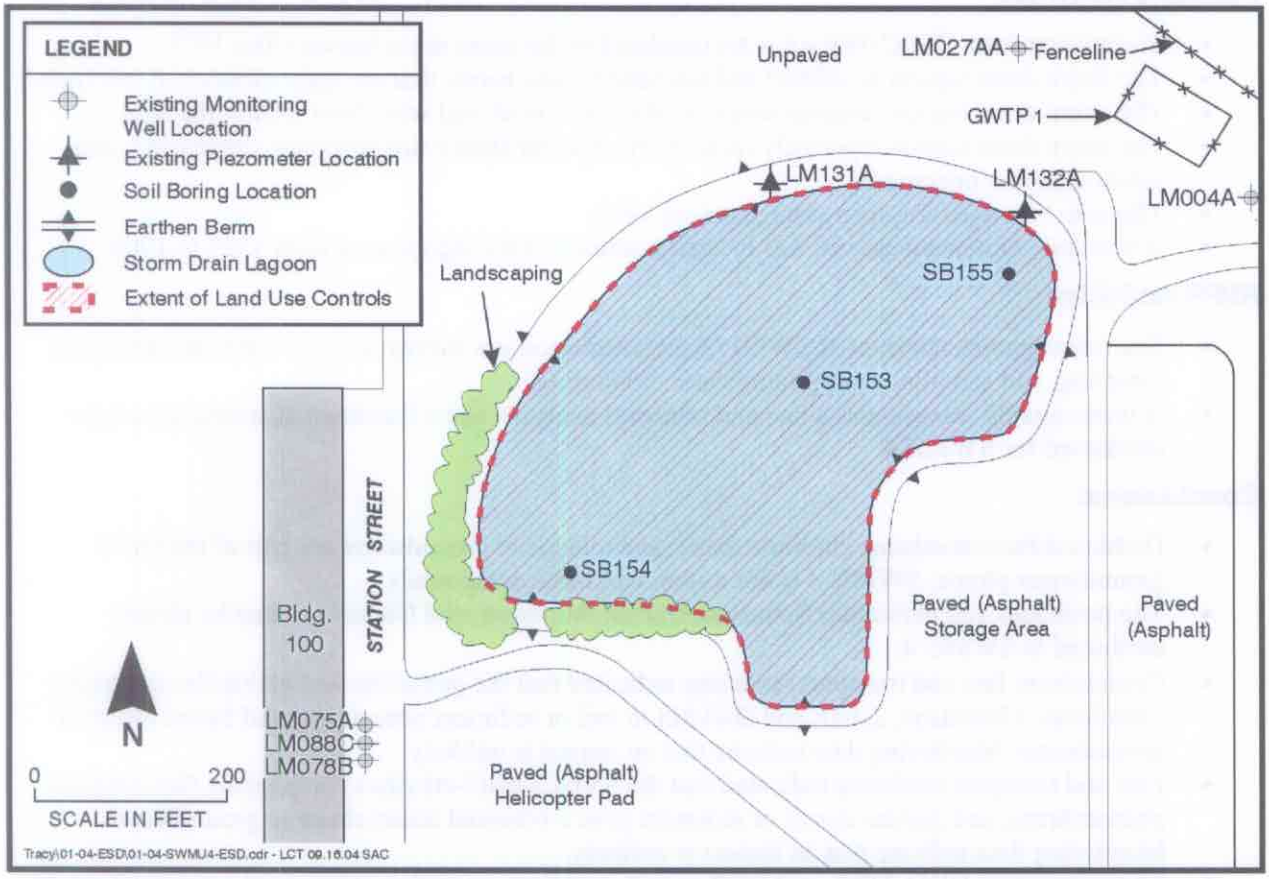
## SITE: SWMU 4




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

### Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Wet season controls installed. Sediment in the pond has contaminant concentrations that pose a health risk under the residential scenario according to the baseline risk assessment.

### Contaminants of Concern:

- Aluminum, Arsenic, DDX, Dieldrin, Lead, Manganese, Polycyclic Aromatic Hydrocarbons, and PCBs.

## Site Characteristics:

### Past Site Activities

- Stormwater from DDJC-Tracy has accumulated in the storm drain lagoon since 1971.
- The storm drain lagoon is unlined and bounded by soil berms that are approximately 6 feet high.
- The storm drain lagoon contains water nearly year-round, and waterfowl inhabit the area.
- The storm drain lagoon reportedly received rinse water from paint-stripping, degreasing, and steam-cleaning operations.
- This area was used for open storage before 1952.
- A stockpile of manganese ore was located northeast of the lagoon area from 1957 to 1968.

### RI/FS Activities

- Site investigation activities at SWMU 4 included a soil gas survey, surface water and sediment sampling, soil sampling, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were conducted for SWMU 4.

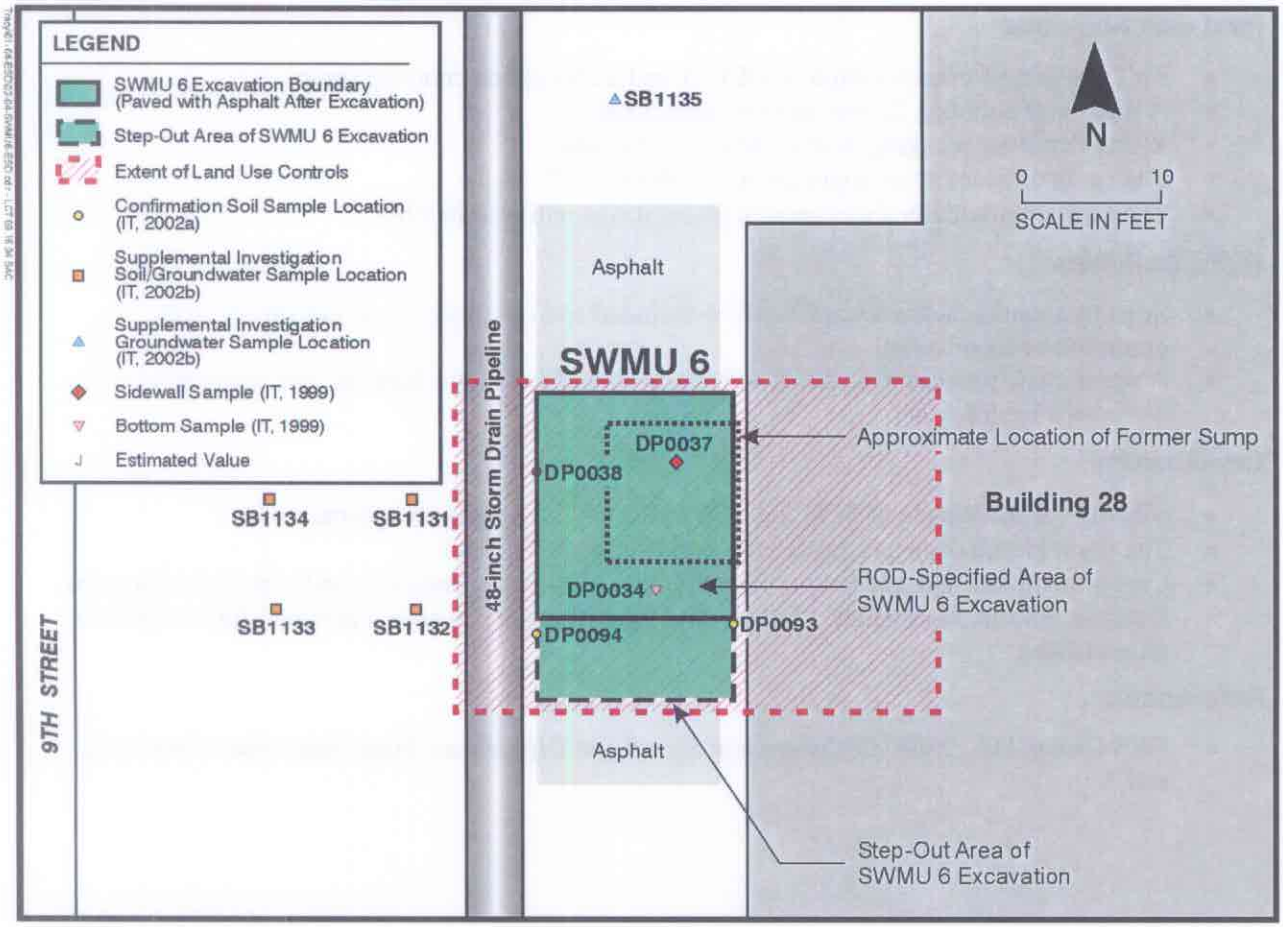
## Conclusions:

- Dichlorodifluoromethane, chloromethane, and toluene in groundwater are part of the OU 1 groundwater plume; SWMU 4 is not a source of these compounds.
- The pesticides and herbicides Simazine, Diuron, Monuron, and Dieldrin cannot be clearly attributed to SWMU 4.
- Contaminant fate and transport modeling indicated that the pesticides and herbicides carbaryl, carbofuran, Chlordane, 2,4-D, and Dieldrin in soil or sediment pose a potential future threat to groundwater. Monitoring data indicate that an impact is unlikely.
- Fate and transport modeling indicated that the SVOCs bis(2-ethylhexyl)phthalate, fluoranthene, phenanthrene, and pyrene in soil or sediment pose a potential future threat to groundwater. Monitoring data indicate that an impact is unlikely.
- The compounds DDD, DDE, and DDT in soil, sediment, or surface water pose a potential risk to ecological receptors. The estimated risk for the metals zinc and selenium in soil or sediment are above the benchmark level for ecological receptors; however, these risks are considered conservative because of the biases in the analytical data.
- Compounds other than those listed above were detected in soil, sediment, surface water, or groundwater; however, none exceeded the risk criteria or represented a potential or actual threat to beneficial uses of groundwater or background groundwater quality. Thus, these compounds are not considered contaminants of concern.

## References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4.
- URS, 2003. *Amendment of the Sitewide Comprehensive Record of Decision*. Final. August. Section 4.3: paragraph 4.3.4. Section 2.3: paragraph 2.3.6.

## SITE: SWMU 6




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Excavation completed. Residual contamination includes Dieldrin concentrations above industrial preliminary remediation goals.

### Contaminants of Concern:

- 2,3,7,8-TCDD, Benzo(a)anthracene, Benzo(a)pyrene, Beryllium, Dieldrin, and PCBs.

### Site Characteristics:

#### Past Site Activities

- This site is the former location of UST 21 and a 250-gallon concrete sump.
- A portion of Building 28 was used for repackaging.
- Wastes from repackaging were collected in the sump.
- The sump operated from approximately 1968 to 1977.
- The sump was initially abandoned in place; it was removed in 1988.

#### RI/FS Activities

- Site investigation activities at SWMU 6 included soil sampling, a soil gas survey, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 6.

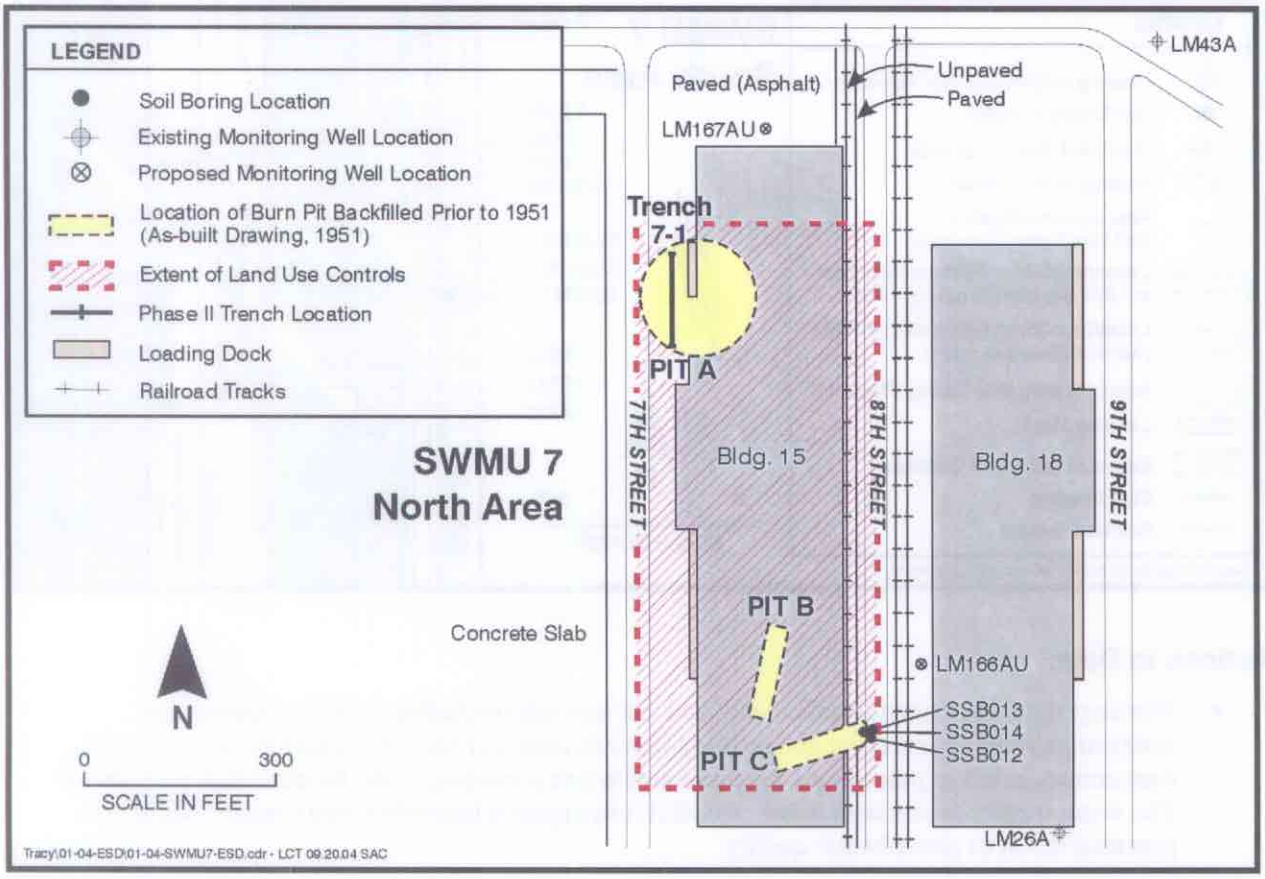
### Conclusions:

- SWMU 6 was a source of PCE and TCE to the OU 1 groundwater plume.
- The pesticide Lindane has impacted groundwater at SWMU 6.
- Contaminant fate and transport modeling indicated that the pesticides and herbicides Dicamba, Dieldrin, Endrin, Heptachlor, Lindane, and 2,4,5-T in the soil pose a potential future threat to groundwater.

### References:

- URS Group, Inc., 2004. *Explanation of Significant Differences.* Final. September. Sections 2 and 3.

## SITE: SWMU 7, North and South Areas

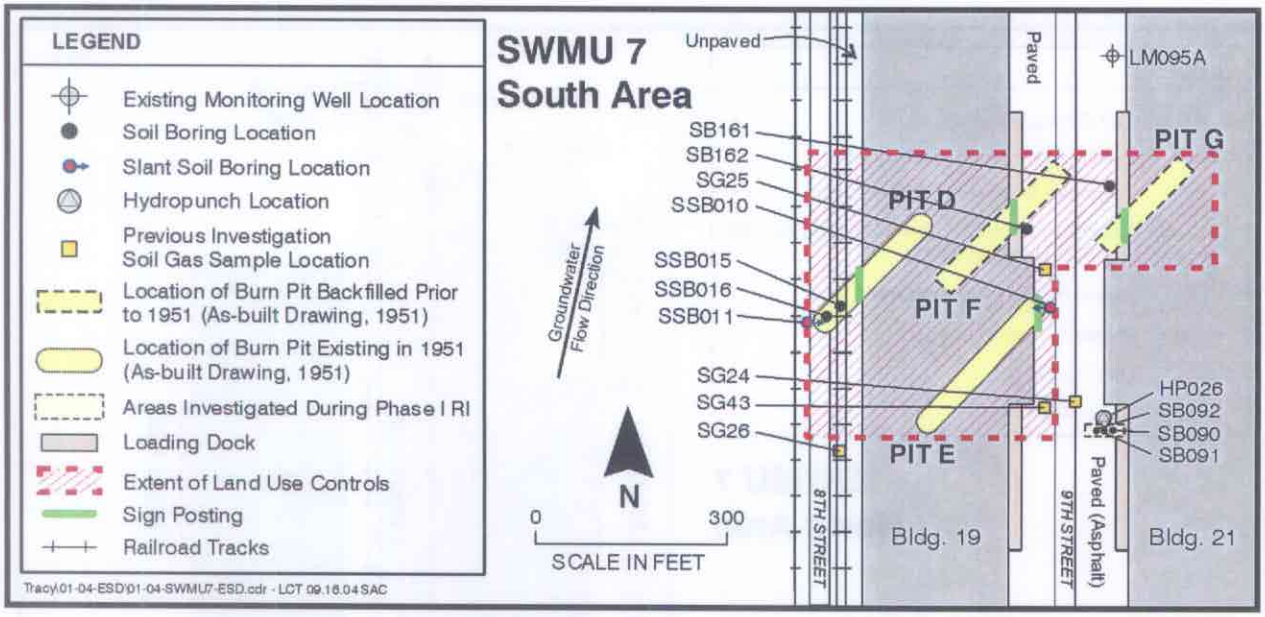



### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.
- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures), existing structures, and pavement. By covering portions of the disposal pits, the building foundations mitigate groundwater threats by reducing rainwater infiltration and preventing exposure to underlying soil. Removal of pavement or the building foundations constitutes disruption of the selected remedy and triggers notification of the agencies and follow-up activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install and maintain warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.




## Actions to Date:

- Warning signs have been installed and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report*. Soil contamination left in place poses potential health risk according to the baseline risk assessment. The water quality assessment in the remedial investigation/feasibility study report identified a potential threat to groundwater quality.

## Contaminants of Concern:

- 1,2-Dichloroethene, 2,3,7,8-TCDD, 2,4-D, Benzo(a)anthracene, Benzo(a)pyrene, Beryllium, Bis(2-ethylhexyl)phthalate, Chlordane, DDD, DDE, Dieldrin, Linuron, PCBs, Simazine, and Trichloroethene.

## Site Characteristics:

### Past Site Activities

- SWMU 7 is the site of seven pits (Pits A-G) now partially or completely beneath Buildings 15, 19, and 21.
- The pits may have been up to 16 feet deep.
- The pits were reportedly used between 1942 and 1954 for disposing of medical supplies containing mercury and phosphate compounds, narcotics, pharmaceuticals, radiological supplies, and electron tubes.
- Solids and liquids stored or used at the depot may have been buried or burned in the pits.

### RI/FS Activities

- Site investigation activities at SWMU 7 included a geophysical survey, soil gas surveys, radionuclide, screening, soil sampling, trenching, monitoring well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for this site.

**Conclusions:**

- Groundwater has been impacted by bis(2-ethylhexyl)phthalate and octachlorociosin.
- Contaminant fate and transport modeling indicated that contaminants in the soil pose a potential future threat to groundwater. These contaminants are:
  - Pit F: VOCs (1,2-DCE, TCE)
  - Pit C: SVOCs (bis[2-ethylhexyl]phthalate)
  - Pesticides and herbicides (Dieldrin, Linuron)
  - Pit D: Pesticides and herbicides (2,4-D, Dieldrin, Linuron, Simazine)
  - Petroleum hydrocarbons (TPH-diesel)

**References:**

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision.*
- Radian International, 1998. *Addendum to the Future Development Report.*
- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Sections 4.4 and 4.6.

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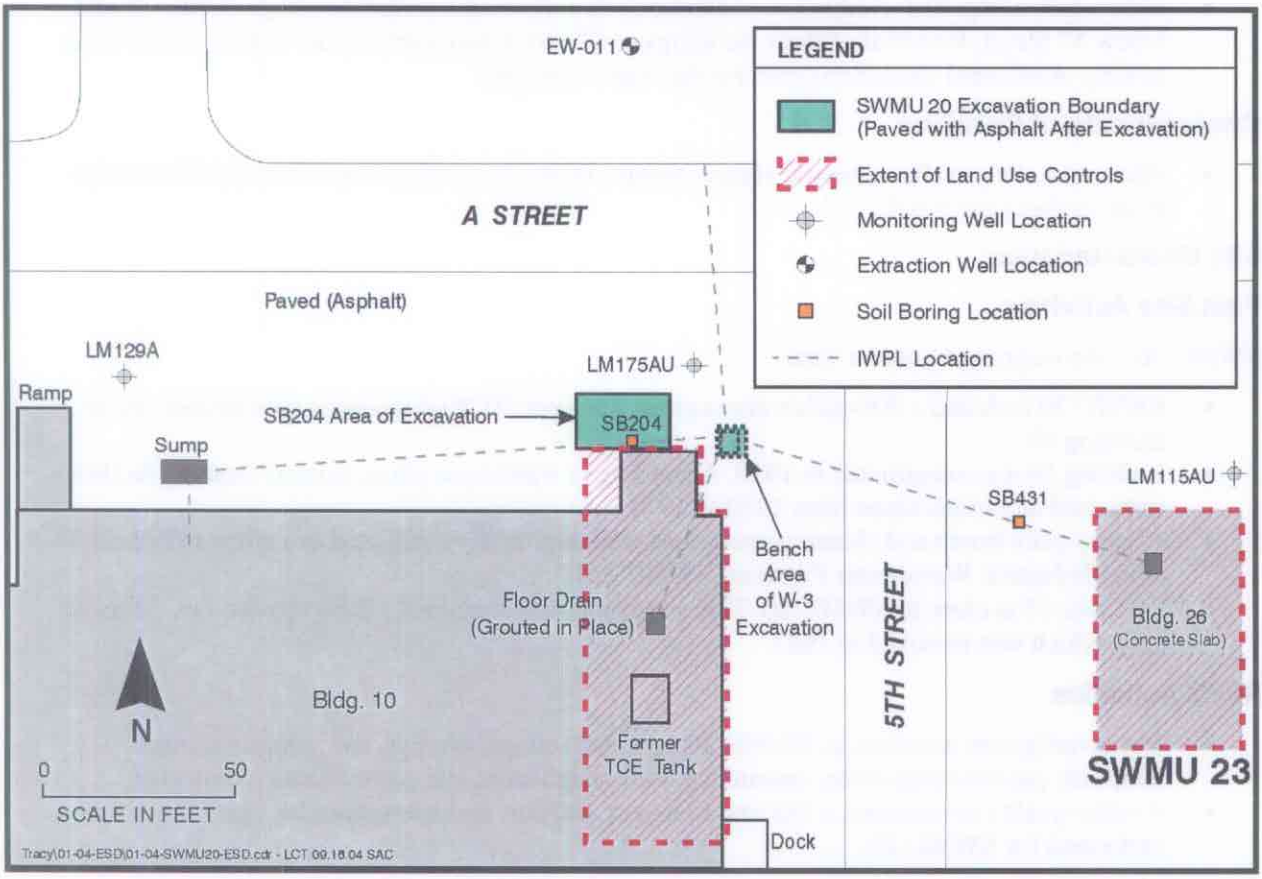
## SITE: SWMU 20




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures) and existing structures. By covering portions of the contaminated soil, Buildings 10 and 26 mitigate groundwater threats by reducing rainwater infiltration and preventing exposure to the underlying soil. Removal of the building foundations constitutes disruption of the selected remedy and triggers notification of the agencies and follow-up activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Excavation completed. Additional contamination may remain under Buildings 10 and 26 and below 5th Street. Removal of these buildings or 5th Street may increase the risk to groundwater quality. Additional characterization for this site is pending.

### Contaminants of Concern:

- Aluminum, Polycyclic Aromatic Hydrocarbons, PCBs, Trichloroethene, and Total Petroleum Hydrocarbons as Diesel.

### Site Characteristics:

### Past Site Activities

SWMU 20 – Aboveground Solvent Tank

- SWMU 20 included a 500-gallon aboveground solvent (TCE) degreasing unit located inside Building 10.
- Building 10 was constructed in 1950. According to warehouse plans, several cleaning facilities were used at various times from 1950 to 1974.
- A spray paint booth and cleaning operations were reportedly connected to a sump (Manhole W-1 of the Industrial Wastewater Pipeline [SWMU 33]).
- UST Site 13 is close to SWMU 20. This site reportedly contained a 2,000-gallon No. 2 fuel oil tank, which was removed in 1987.

### RI/FS Activities

- Site investigation activities at SWMU 20 included soil gas surveys, soil sampling, sump sampling, pipeline inspection, monitoring well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 20.

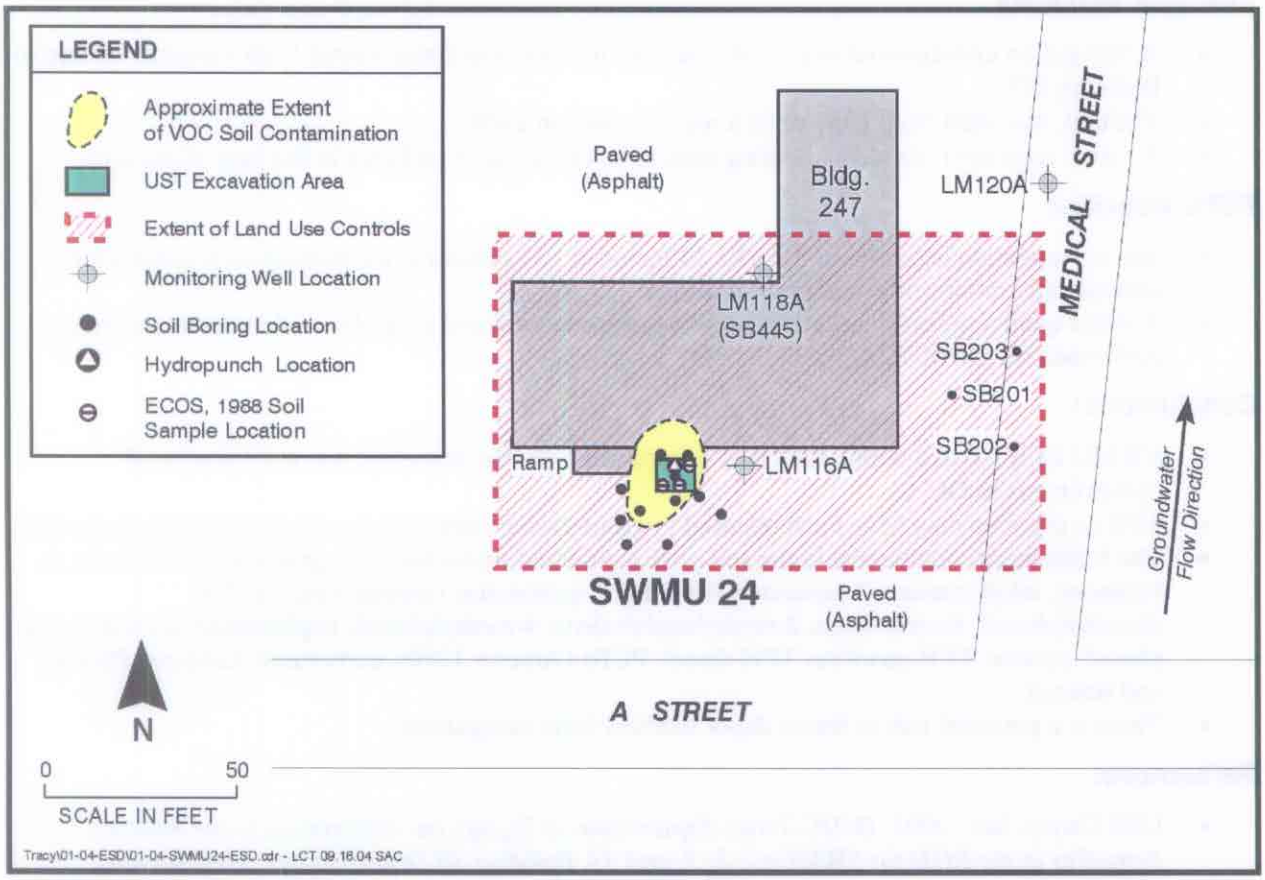
### Conclusions:

- SWMU 20 was a source of TCE and PCE to the OU 1 groundwater plume.
- Groundwater has been impacted by monuron, diuron, alpha-BHC, methiocarb, and 2,4-D.
- Contaminant fate and transport modeling indicated that TCE, ethylbenzene, xylenes, eiethylphthalate, 2,4-dinitrophenol, pentachlorophenol, 2,4,6-trichlorophenol, Dieldrin, Methiocarb, MCPA, Linuron, and TPH-diesel in soil pose a potential future threat to groundwater.

### Reference:

- URS Group, Inc., 2004. *Explanation of Significant Differences*. Final. September. Sections 2 and 5.

## SITE: SWMU 24




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

### Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Bioventing is being performed, but residual PCB, aluminum, and manganese contamination in soil is to be expected. These contaminants pose a risk under the residential scenario according to the baseline risk assessment.

### Contaminants of Concern:

- Acetone, Aluminum, Manganese, PCBs, Polycyclic Aromatic Hydrocarbons, and Toluene.

## Site Characteristics:

### Past Site Activities

- A 500-gallon underground steel tank was used to store petroleum wastes from materials testing in Building 247.
- The tank was used from 1961 until it was removed in 1988.
- A visual inspection conducted during tank removal revealed pinholes in the base of the tank.

### RI/FS Activities

- Site investigation activities at SWMU 24 included soil sampling, monitoring well installation, groundwater monitoring, and air monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 24.

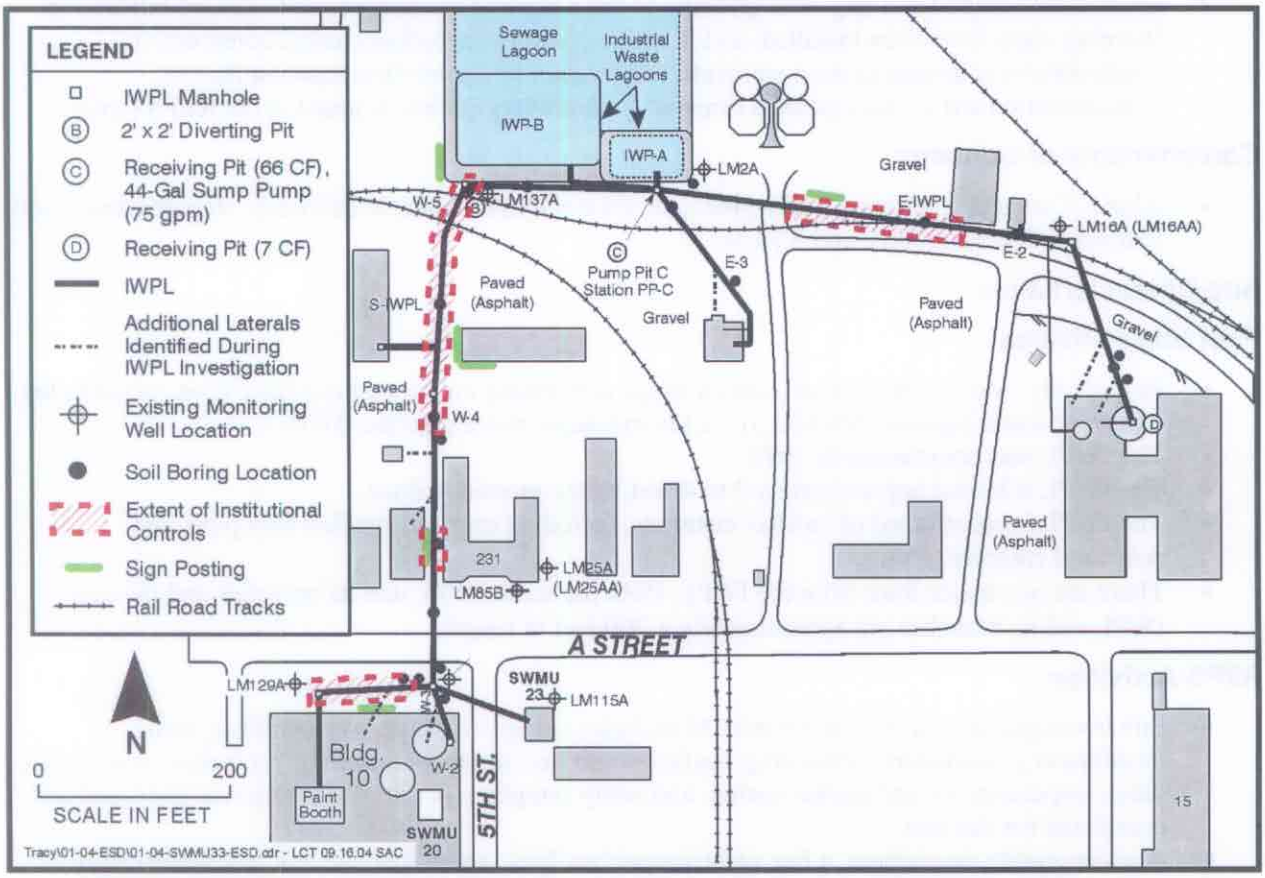
## Conclusions:

- SWMU 24 is located within the OU 1 groundwater plume; however, it is not a source of contaminants to OU 1.
- TPH as gasoline may have been released to groundwater; however, its extent is extremely limited.
- The following contaminants in the soil pose a potential future threat to groundwater: acetone, 2-butanone, ethylbenzene, 2-hexanone, 4-methyl-2-pentanone, toluene, xylenes, 2,4-dimethylphenol, fluoranthene, 2-methylnaphthalene, 4-methylphenol, naphthalene, phenanthrene, phenol, pyrene, TPH-gasoline, TPH-diesel, PCBs (Aroclor 1260), carbofuran, Lindane, Phorate, and Ronnel.
- There is a potential risk to future depot workers from manganese.

## References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4: paragraph 4.4.2.

## SITE: SWMU 33




### Purpose of Controls:

- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Maintain existing pavement/compacted gravel covering portions of SWMU 33 that have contaminants exceeding the cleanup standard. Removal and/or modification of the pavement or compacted gravel constitutes disruption of the selected remedy and triggers notification of the agencies and follow-up activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Excavation completed along with grouting of the industrial waste pipeline to reduce infiltration. Warning signs have been installed, and land use controls (including current construction notification requirements) are documented *Addendum to Future Development Report*. Contamination left in place poses a threat to groundwater quality as noted in the RI/FS report.

### Contaminants of Concern:

- Aldrin, Carbaryl, Dieldrin, Diethylphthalate, Di-n-butylphthalate, Methiocarb, Naphthalene, Total Petroleum Hydrocarbons, and Xylenes.

### Site Characteristics:

### Past Site Activities

- Historically, wastestreams from various shops performing unit operations have been routed to the industrial waste lagoons (SWMU 3) via the industrial waste pipeline (IWPL).
- The IWPL was constructed in 1972.
- The IWPL is buried approximately 2 to 4 feet below ground surface.
- The IWPL is constructed of various materials, including transite, vitrified clay pipe, and polyvinyl chloride (PVC).
- There are two major lines from the IWPL. Both the south IWPL and its branches and the east IWPL and its branches are approximately 1,200 feet in length.

### RI/FS Activities

- Site investigation activities at SWMU 33 included soil gas surveys, soil sampling, well installation groundwater monitoring, surface water and sediment sampling, a pipeline assessment, video inspection, air and smoke testing, and sump sampling. A removal action was proposed and completed for this site.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 33.

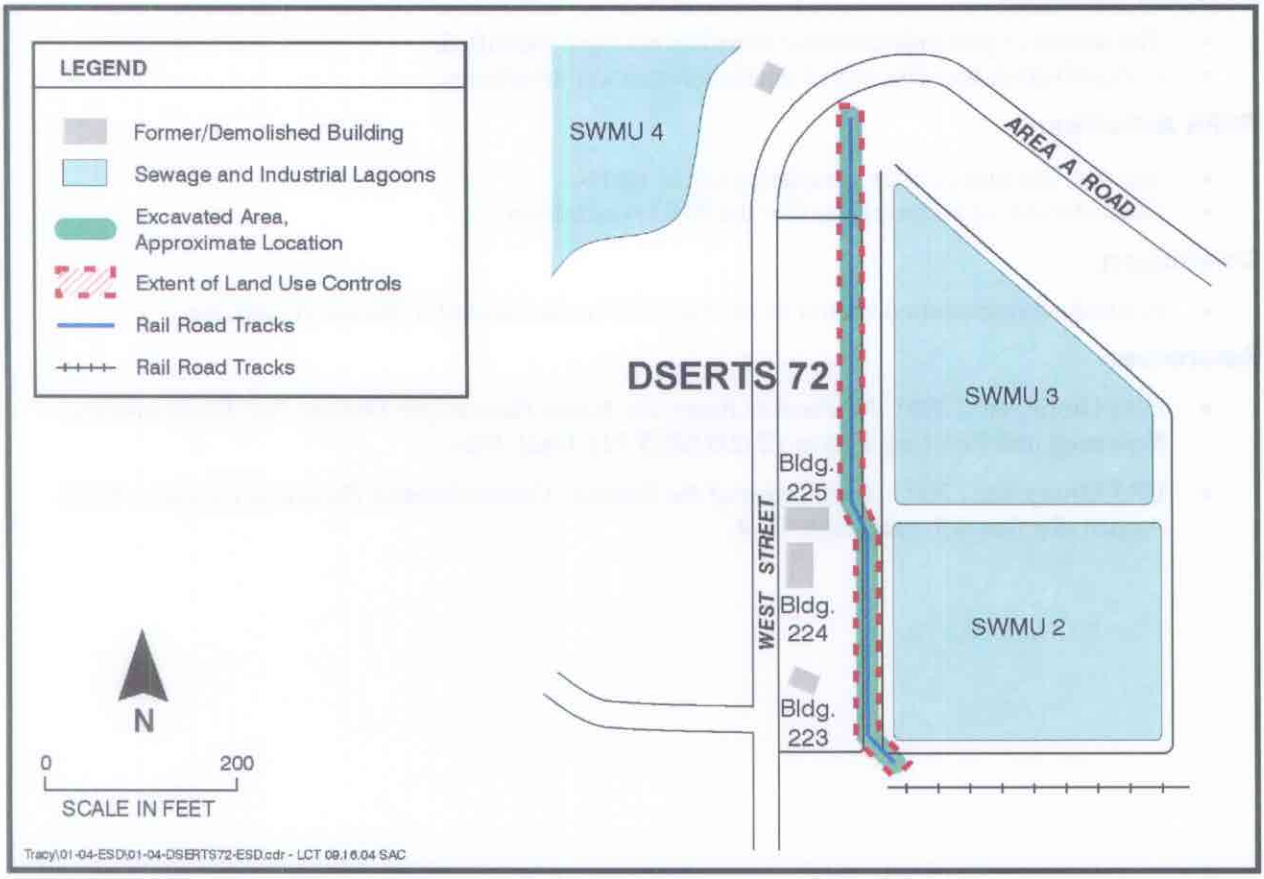
### Conclusions:

- SWMU 33 was a probable source of TCE, PCE, chloroform, 1,1-DCA, and 1,2-DCE in the OU 1 groundwater plume.
- SWMU 33 was also a source of DDD, DDE, DDT, Monuron, Diuron, alpha-BHC, and Dieldrin to groundwater.
- Contaminant fate and transport modeling indicated that xylenes, diethylphthalate, di-n-butylphthalate, naphthalene, aldrin, carbaryl, dieldrin, methiocarb, and TPH as diesel in the soil are potential threats to groundwater.
- Compounds besides those listed above were detected in soil, soil gas, and groundwater; however, none exceeded the risk criteria or represented a potential or actual threat to beneficial uses of groundwater or background groundwater quality. Thus, these compounds are not considered contaminants of concern.

### References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision.*
- Radian International, 1998. *Addendum to the Future Development Report.*
- URS Group, Inc., 2001. DDJC-Tracy *Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, building 30 Drum Storage Area, and the Northern Depot Soils Area.* Revised Draft Final, June. Final, July. Sections 4.4 and 4.8.

## SITE: DSERTS 72




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

### Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Post-excavation sampling identified residual contaminant concentrations above residential preliminary remediation goals.

### Contaminants of Concern:

- DDX and Dieldrin.

### Site Characteristics:

### Past Site Activities

- The source of pesticide contamination has not been identified.
- Contamination was discovered during storm drain installation.

### RI/FS Activities:

- Site was discovered after completion of the RI/FS.
- Characterization is documented in the ROD Amendment.

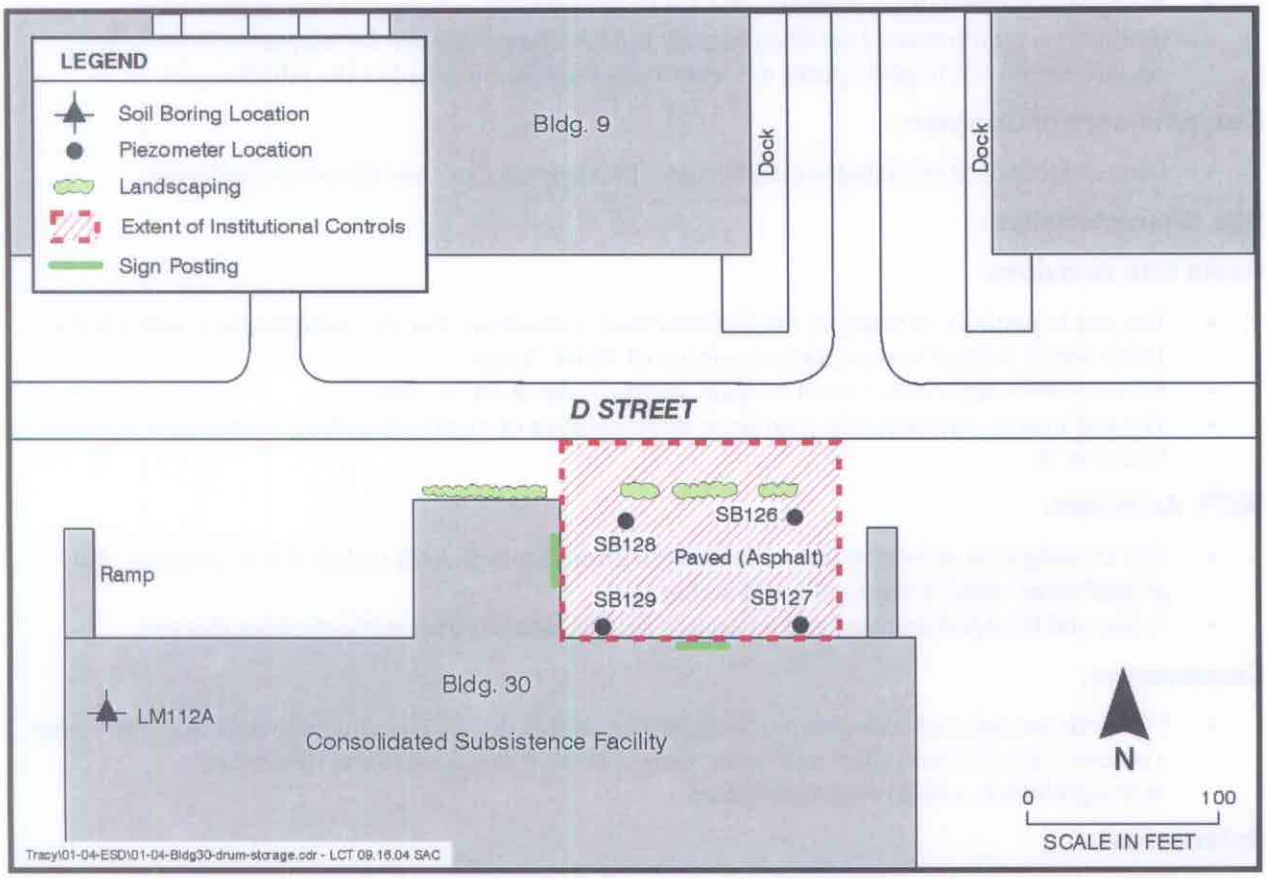
### Conclusion:

- Pesticide contamination should be re-evaluated in the event of a change in land use.

### Reference:

- URS Group, Inc., 2001. *No Further Response Action Planned for Defense Site Environmental Reporting and Tracking System 72 (DSERTS 72).* Final. May.
- URS Group, Inc., 2003. *Amendment of the Sitewide Comprehensive Record of Decision*. Final. August. Section 4.3: paragraph 4.3.4.

## SITE: Building 30 Drum Storage Area




### Purpose of Controls:

- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures), existing structures, and pavement. Maintaining existing structures and pavement prevents the infiltration of rainwater that could otherwise transport contaminants to groundwater. Removal and/or disruption of the pavement or building foundation constitutes disruption of the selected remedy and triggers notification of the agencies and follow-on activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Warning signs have been installed, and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report*. Soil contamination left in place poses a threat to water quality as noted in the RI/FS report.

### Contaminants of Concern:

- Benzyl Alcohol, Bis(2-ethylhexyl)phthalate, Diethylphthalate, and Di-n-butylphthalate.

### Site Characteristics:

### Paste Site Activities

- The site is partially covered by the Consolidated Subsistence Facility (which was constructed in 1992) and is located in the southern portion of DDJC-Tracy.
- Solvents were reportedly stored in drum storage areas at DDJC-Tracy.
- The site history indicates that petroleum hydrocarbons or metal-containing wastes were stored at Building 30.

### RI/FS Activities:

- Site investigation activities at the Building 30 Drum Storage Area included soil sampling. No groundwater samples were collected at this site.
- A fate and transport analysis and a baseline risk assessment were performed for this site.

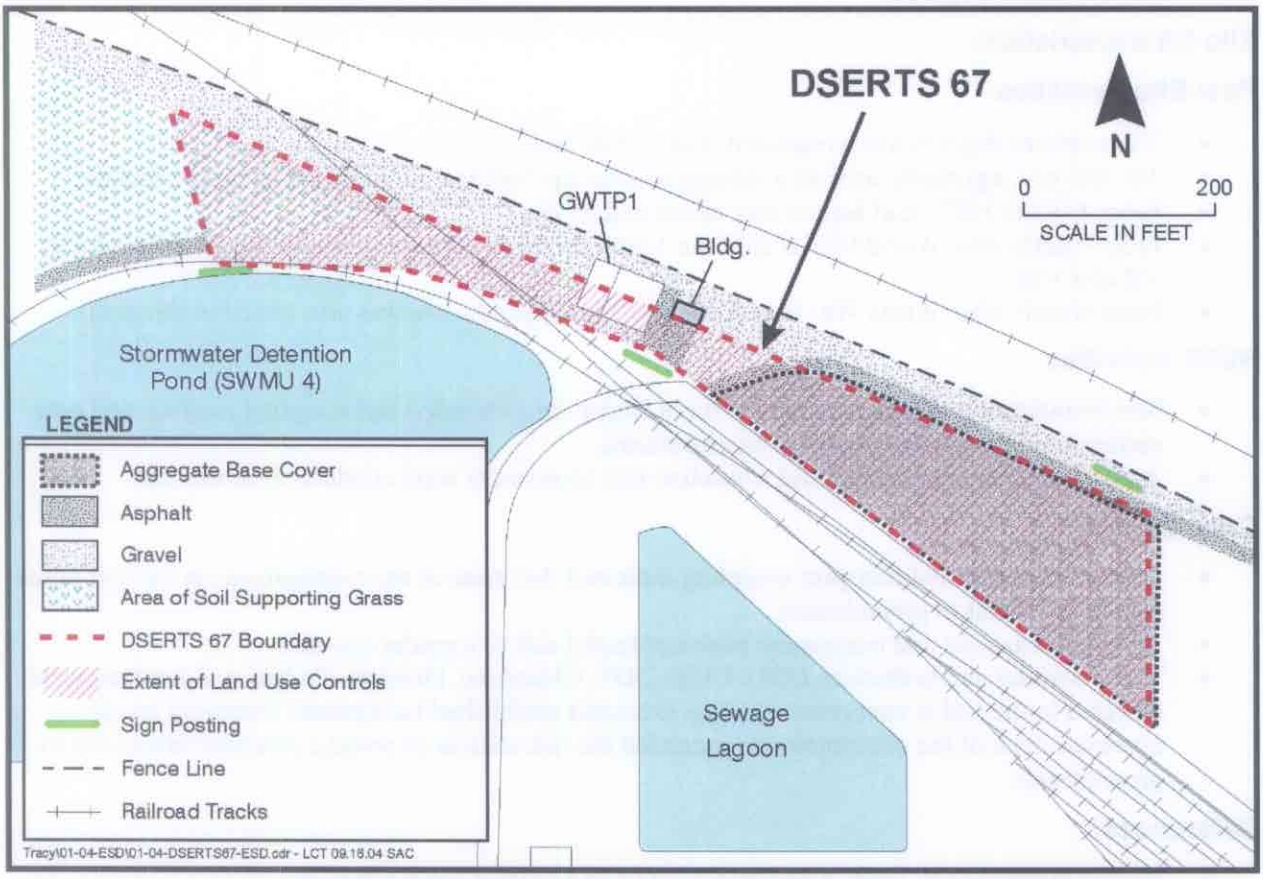
### Conclusions:

- Contaminant fate and transport modeling indicated that the following compounds in the soil pose a potential future threat to groundwater: benzyl alcohol, bis(2-ethylhexyl)phthalate, diethylphthalate, and di-n-butylphthalate.

### References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision.*
- Radian International, 1998. *Addendum to the Future Development Report.*
- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Sections 4.4 and 4.7.

## SITE: Northern Depot Soils Area (DSERTS 67)




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.

### Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures), existing structures; aggregate base, gravel, and asphalt covers; and vegetation.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- Additional aggregate cover has been installed at DSERTS 67. Warning signs have been installed, and land use controls (including current construction notification requirements) are documented *Addendum to Future Development Report*. Contamination left in place poses potential health risk according to the baseline risk assessment.

### Contaminants of Concern:

- Arsenic and Manganese.

### Site Characteristics:

### Past Site Activities

- The northern depot is a nonvegetated area of bare soil.
- The site was reportedly used as a storage area for the National Stockpile of Strategic Metals.
- From 1980 to 1987, lead ballast was stored in this area.
- From shortly after World War II until the 1980s, ferrous chromium ore was stored in Quadrants VII and VIII.
- From shortly after World War II until the 1970s, manganese ore was also stored in this area.

### RI/FS Activities

- Site investigation activities in the Northern Depot Area included soil sampling (surface and near surface) and respirable dust level measurements.
- A fate and transport analysis and a baseline risk assessment were conducted for this site.

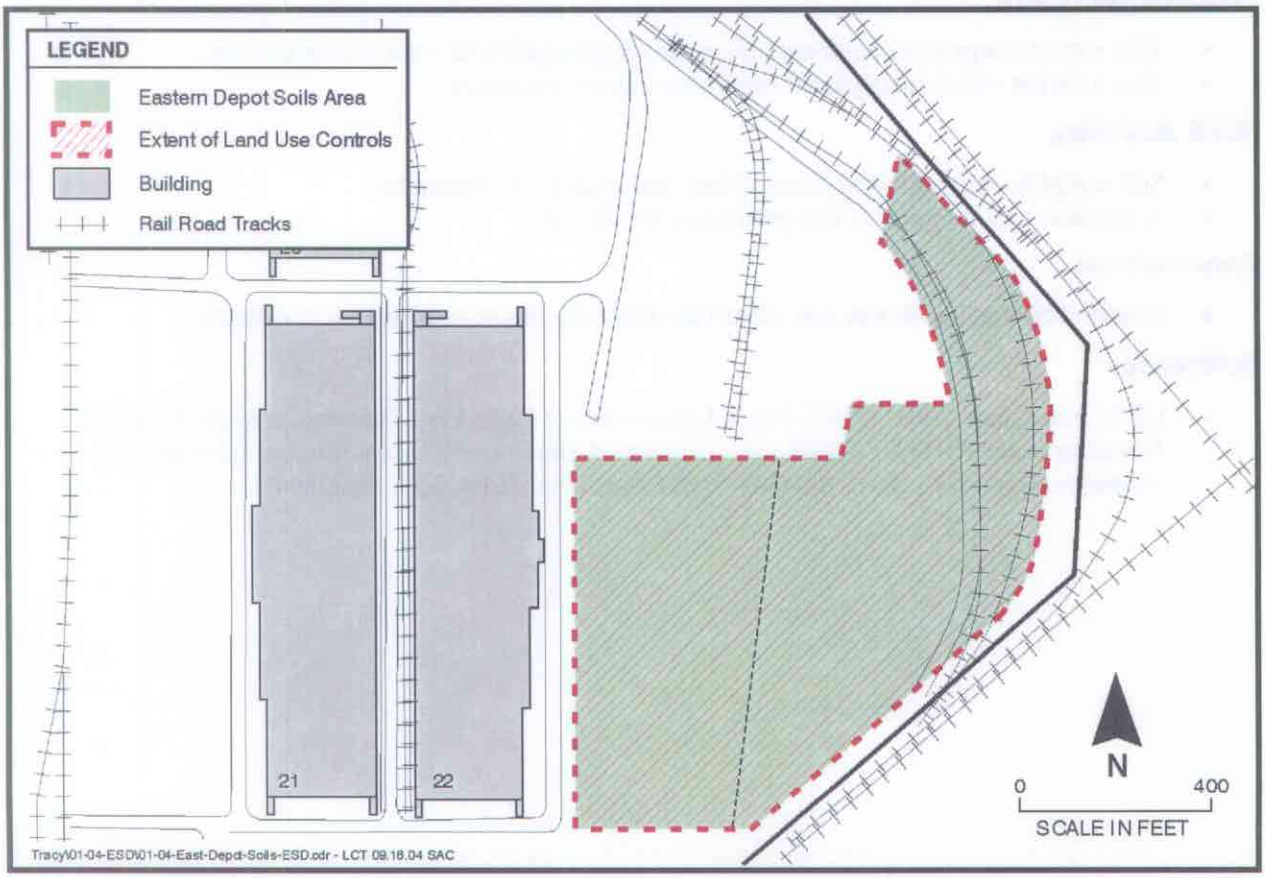
### Conclusions:

- Contaminant fate and transport modeling indicated that none of the contaminants in the soil poses a potential threat to groundwater.
- The metals arsenic and manganese pose a potential risk to a grader operator.
- The pesticides and herbicides DDD, DDE, DDT, Chlordane, Dieldrin, Endrin, and Lindane were detected in the soil at concentrations that exceeded established background threshold levels; however, none of the concentrations exceeded the risk criteria or posed a potential future risk to groundwater.

### References:

- Radian International, 1998. *Addendum to the Future Development Report.*
- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area.* Revised Draft Final, June. Final, July. Sections 3.4 and 4.4.

## SITE: Eastern Depot Soils Area




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

### Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- None.

### Contaminants of Concern:

- Aluminum, Arsenic, Chlordane, DDX, Dieldrin, and PCBs.

### Site Characteristics:

### Past Site Activities

- This site encompasses undefined area-wide contamination in a nonvegetated area.
- This location was formerly used for grader training exercises.

### RI/FS Activities

- Soil samples were collected from surface and near surface samples.
- A baseline risk assessment was performed for this site.

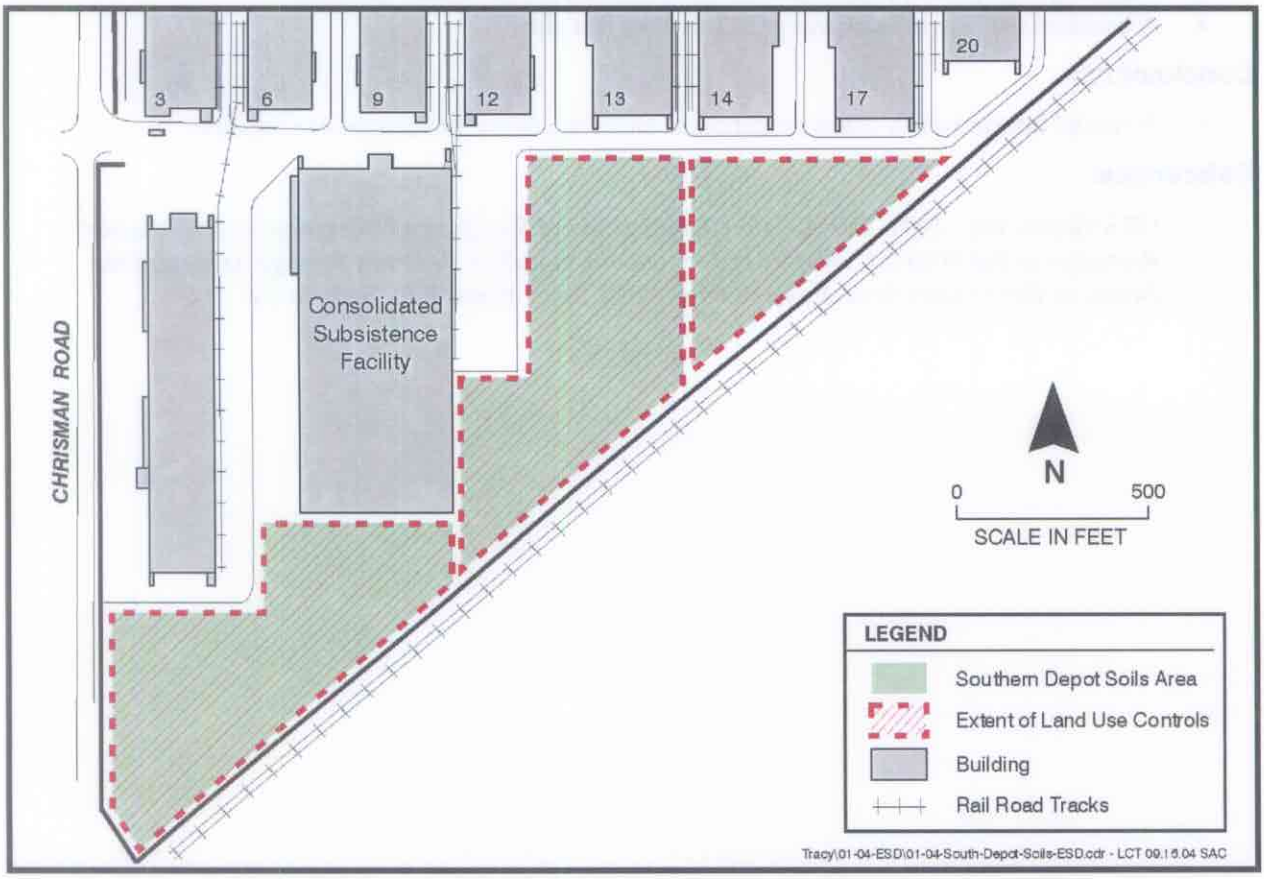
### Conclusions:

- Potential human health risk was identified under the future residential use scenario.

### Reference:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4.

## SITE: Southern Depot Soils Area




### Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

### Land Use Controls Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

### Actions to Date:

- None.

### Contaminants of Concern:

- Dieldrin.

### Site Characteristics:

### Past Site Activities

- The site encompasses undefined area-wide contamination in a nonvegetated area.
- This location was formerly used for grader training exercises.

### RI/FS Activities

- Soil sampling included the collection of surface and near surface samples.
- A baseline risk assessment was performed for this site.

### Conclusions:

- Potential human health risk was identified under the future residential use scenario.

### References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4.